

In re Patent Application of
PAU ET AL.
Serial No. **Not Yet Assigned**
Filed: **Herewith**

AI B1
CONT'D
RULE 10
1.126 11. A method of producing an output bitstream of
coded digital video data having a desired bit-rate different
from a bit-rate of an input bitstream of coded digital video
data, the method comprising:

dividing the input bitstream into a sequence of
coded data and into a sequence of control bits;

modifying the sequence of control bits as a function
of the desired bit-rate of the output bitstream for producing
an output sequence of control bits;

decoding the sequence of coded data for producing an
intermediate sequence of data;

quantizing with a pre-established step and coding
the intermediate sequence of data for producing an output
sequence of coded data; and

merging the output sequence of control bits and the
output sequence of coded data for producing the output
bitstream of coded digital video data having the desired bit-
rate.

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12. A method according to Claim 10 wherein the
intermediate sequence of data is dequantized before being
quantized with the pre-established step.

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13. A method according to Claim 10 wherein the
input and output bitstreams of coded digital video data
comprise MPEG data.

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14. A method according to Claim 10 wherein the
input and output bitstreams of coded digital video data
comprise MPEG2 data.

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RULE 14
1.126 15.

15. A method according to Claim 10 wherein the decoding comprises performing a Huffman decoding followed by a run-length decoding; and wherein coding comprises performing a run-length coding followed by a Huffman coding.

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16. A method according to Claim 10 wherein quantizing with the pre-established step comprises a feed-back rate control technique.

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17. A method according to Claim 10 wherein quantizing with the pre-established step comprises a feed-back/forward hybrid rate control technique.

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18. A method of producing an output bitstream of coded digital video data having a desired bit-rate different from a bit-rate of an input bitstream of coded digital video data, the method comprising:

dividing the input bitstream into a sequence of coded data and into a sequence of control bits;

modifying the sequence of control bits as a function of the desired bit-rate of the output bitstream for producing an output sequence of control bits;

decoding the sequence of coded data using a Huffman decoding followed by a run-length decoding for producing an intermediate sequence of data;

quantizing with a pre-established step and coding the intermediate sequence of data using a run-length coding followed by a Huffman coding for producing an output sequence of coded data; and

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merging the output sequence of control bits and the output sequence of coded data for producing the output bitstream of coded digital video data having the desired bit-rate.

RULE 19
1.126

~~19.~~ A method according to Claim 18 wherein the intermediate sequence of data is dequantized before being quantized with the pre-established step.

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~~20.~~

A method according to Claim 18 wherein the input and output bitstreams of coded digital video data comprise MPEG data.

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~~21.~~

A method according to Claim 18 wherein the input and output bitstreams of coded digital video data comprise MPEG2 data.

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~~22.~~

A method according to Claim 18 wherein quantizing with the pre-established step comprises a feed-back rate control technique.

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~~23.~~

A method according to Claim 18 wherein quantizing with the pre-established step comprises a feed-back/forward hybrid rate control technique.

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~~24.~~

A device for producing a bitstream of coded digital video data having a bit-rate different from a bit-rate of an input bitstream of coded digital video data, the device comprising:

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a first circuit for separating the input bitstream into a sequence of coded data and into a sequence of control bits;

a second circuit having an input for receiving the sequence of control bits, said second circuit for generating a modified sequence of control bits as a function of the desired bit-rate of the output bitstream for providing an output sequence of control bits;

a decoder having an input for receiving the sequence of coded data and an output for providing an intermediate sequence of data;

a quantizer for quantizing the intermediate sequence of data with a pre-established step;

an encoder connected to an output of said quantizer for providing an output sequence of coded data; and

a third circuit for merging the output sequence of control bits and the output sequence of coded data for producing the output bitstream having the desired bit-rate.

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RULE 24
1.126-25. A device according to Claim 24 further comprising a dequantizer connected between said decoder and said quantizer for dequantizing the intermediate sequence of data.

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-26. A device according to Claim 24 wherein the input and output bitstreams of coded digital video data comprises MPEG data.

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RULE 20
1.126 27.

27. A device according to Claim 24 wherein the input and output bitstreams of coded digital video data comprises MPEG2 data.

²⁷
~~28.~~ A device according to Claim 24 wherein said decoder comprises a Huffman decoder and a run-length decoder connected in series thereto.

²⁸
~~29.~~ A device according to Claim 24 wherein said encoder comprises a run-length coder and a Huffman coder connected in series thereto.

²⁹
~~30.~~ A device according to Claim 24 further comprising a bit rate control circuit connected to said encoder for setting quantizing of the intermediate sequence of data by said quantizer.

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~~31.~~ A device according to Claim 24 wherein said third circuit comprises a multiplexer connected to outputs of said first circuit, said second circuit and said encoder.

³¹
~~32.~~ A device for producing a bitstream of coded digital video data having a bit-rate different from a bit-rate of an input bitstream of coded digital video data, the device comprising:

a first circuit for separating the input bitstream into a sequence of coded data and into a sequence of control bits;

a second circuit having an input for receiving the sequence of control bits, said second circuit for generating a

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modified sequence of control bits as a function of the desired bit-rate of the output bitstream for providing an output sequence of control bits;

a decoder having an input for receiving the sequence of coded data and an output for providing an intermediate sequence of data, said decoder comprising a Huffman decoder and a run-length decoder connected in series thereto;

a quantizer for quantizing the intermediate sequence of data with a pre-established step;

an encoder connected to an output of said quantizer for providing an output sequence of coded data, said encoder comprising a run-length coder and a Huffman coder connected in series thereto; and

a third circuit for merging the output sequence of control bits and the output sequence of coded data for producing the output bitstream having the desired bit-rate.

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RULE 32
1.126 ~~33~~. A device according to Claim 32 further comprising a dequantizer connected between said decoder and said quantizer for dequantizing the intermediate sequence of data.

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~~34~~. A device according to Claim 32 wherein the input and output bitstreams of coded digital video data comprises MPEG data.

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~~35~~. A device according to Claim 32 wherein the input and output bitstreams of coded digital video data comprises MPEG2 data.